GARDEN AND FOREST.

PUBLISHED WEEKLY BY

THE GARDEN AND FOREST PUBLISHING CO.

OFFICE: TRIBUNE BUILDING, NEW YORK.

Conducted by . . . . . Professor C. S. SARGENT.

ENTERED AS SECOND-CLASS MATTER AT THE POST OFFICE AT NEW YORK, N. Y.

NEW YORK, WEDNESDAY, FEBRUARY 12, 1890.

TABLE OF CONTENTS.

PAGE.

EDITORIAL ARTICLES:—Forest Questions Before Congress.—A Remarkable Walnut-Tree. 73
Entrance to Père-Lachaise Cemetery, Paris. (Illustrated.) 74
The Art of Gardening—An Historical Sketch.—XVII. Ancient India, *Mrs. Schuyler Van Rensselaer.* 74
Exotic Shrubs in Canada. . . . . *J. G. Jack.* 75
Vanda cœrulea. (Illustrated.) 76

FOREIGN CORRESPONDENCE:—London Letter. . . . . *W. Watson.* 76

CULTURAL DEPARTMENT:—Ericas. . . . . *W.* 78
Grafting. . . . . *Professor J. L. Budd.* 79
Perennial Pyrethrums. . . . . *O.* 79
Perennials from Seed.—III. . . . . *E. O. Orpet.* 80
Orchid Notes. . . . . *John Weathers, F. Goldring.* 80
Anemone blanda and Iris Bakeriana. . . . . *Max Leichtlin.* 80

CORRESPONDENCE:—Forestry Matters in New Hampshire. . . . . *J. B. Harrison.* 81
A Late African Novelty. . . . . *C. A. Dana.* 81
Spanish Moss in Northern Tennessee. . . . . *J. M. Safford.* 81
Vegetables Under Glass in New Jersey. . . . . *S.* 81

RECENT PUBLICATIONS 82

PERIODICAL LITERATURE. 83

EXHIBITIONS:—Orchids at Short Hills, New Jersey. 83

NOTES. 84

ILLUSTRATIONS:—Vanda cœrulea, Fig. 17. 77
Entrance to Père-Lachaise Cemetery. 79

Forest Questions Before Congress.

ON January 20th President Harrison transmitted to the Senate and House of Representatives a memorial from the American Association for the Advancement of Science, relating to the preservation of forests upon the public domain, accompanying it with a message earnestly recommending that adequate legislation be provided to arrest the rapid and needless destruction of our great forest areas.

The memorial recalls the fact that the first national legislation which recognized the value of the country's forests and the necessity of throwing about them some protection, grew out of the presentation of the subject to Congress by a committee of this Association. This presentation led to the appointment, in 1877, of an agent, and later to the establishment of a Forestry Division in the Department of Agriculture, for the purpose of gathering and making accessible such information as might educate people to a proper conception of the value and significance of a forest-cover in the economic life of the nation. Twelve years have passed, and sufficient knowledge of our forest conditions, and of their helpful relation to cultural, climatic and economic conditions has been gained to demonstrate that further action by the general government is indispensable if these beneficent influences are to continue.

The Association, at its last meeting, resolved that immediate action ought to be taken for the establishment of a proper administration of the timber lands remaining in the hands of the governments of the United States and Canada, to insure the perpetuity of the forest-cover on the western mountain ranges, and this memorial is presented by a committee appointed under that resolution. It represents that the action asked for relates only to the forest-lands which are the property of the nation, and that the present administration of this property is plainly unsatisfactory, and must be speedily changed if far-reaching injury is to be prevented. It is insisted upon that the relations of the mountain forests to the agricultural regions in the plains are more important than the materials which they now furnish to settlers and miners, and it is urged that the Government alone can rightly administer this property. We may add that in the enforcement of these positions it is sharply argued that a government which feels compelled to face the problem of irrigation for the agricultural development of part of its domain can hardly solve the water question without paying proper heed to the forest question.

In view of these facts the memorialists recommend the appointment of a joint committee of the two Houses of Congress, to consider the need of legislation for the public forest domain—legislation looking toward the appointment of a commission of competent men, salaried and employed for this service alone, to investigate the necessity of preserving certain parts of the present public forest-area, for the maintenance of favorable water conditions, and to devise a practical plan for the permanent administration of such parts of it as it shall appear desirable to retain under government control.

The memorial further recommends that pending such investigation all timber lands now owned by the United States be withdrawn from sale, and provision be made to protect these lands from theft and from ravages by fire, and to supply in a rational manner the local needs for wood and lumber, until a permanent system of forest-administration shall have been organized and put in operation.

The American Forestry Association has also presented a memorial to Congress, which admirably and concisely sets forth the need of action and the reasons for it. It points out that while the immediate withdrawal of the public forest-lands from sale and entry is absolutely essential, as a first step toward their preservation as forests, it will not of itself secure this end. The destructive fires and extensive thefts will go on as before. Still less will the mere reservation of these lands from sale enable the people to utilize the timber properly. The forest lands must be administered, protected from fire, and the timber cut only when ripe, and with a view to a constant new growth. Some portion of the army can be temporarily employed to guard these lands until a practical system of administration, a common-sense application of scientific knowledge, and of the results of the experience of other nations to the needs of the place and time, can be established. This memorial, a strong and temperate document, is accompanied by a bill providing for the withdrawal of the public forest-lands from survey, sale, entry or disposal under existing laws, and for the guardianship of the army over them while this temporary act remains in force. The bill also provides for the appointment of a Commission to examine the forest-lands of the public domain so as to determine what portions should be kept permanently in forest, and, on or before the opening of the second session of this Congress, to report full a plan for the proper management of the forest-lands belonging to the nation.

It is our belief that the statements in both these memorials are true, absolutely and beyond question, and that they do not exaggerate the evils which are sure to visit the country if the destruction of our forests is not speedily arrested. It is gratifying to know that these petitions are urged upon Congress by men of such attainment and position as Professors Mendenhall, Hilgard and Bessey, William Saunders, of Canada, and B. E. Fernow, who present the memorial of the American Association for the Advancement of Science; while that of the American Forestry Association is signed by Governor Beaver, Herbert Welsh and C. C. Binney, of Pennsylvania; Abbot Kinney, of California; Edgar T. Ensign, of Colorado; and Judge Higley, of New York. The President of the United States, in his message, has followed the example of more than one of his predecessors in recommending prompt action in this matter, and it remains to be seen whether Congress will listen to these entreaties. France has no surplus to expend for any public improvement which does not yield positive and tangible benefit, but France has spent $50,000,000 already to cure the ruin wrought by deforestation, and will spend as much more. Italy is poor, but she is appropri-

ating money to re-clothe a million acres of land which has been stripped of forests. Austria has 800 torrents to hold in check, and Prussia every year buys up waste lands for the purpose of reforesting them. What thoughtful men in this country are asking is not the outlay of millions, but the use of ordinary foresight to make such outlay unnecessary. They only ask that the most efficient agents of forest destruction be restrained for a season, until some persons who are competent can tell us what we really have, and how much of that must be preserved to save us from remediless disaster. A refusal on the part of Congress to give heed to this appeal, which is repeated year after year with increasing earnestness and urgency, would be little less than criminal.

The portrait of a remarkable Walnut-tree found growing by Professor Rothrock at Lower Brandon, on the lower James River, in Virginia, is published in the January issue of *Forest Leaves*. Professor Rothrock describes it as "a gigantic spreading tree, which towers higher and spreads over a wider area than any of its associates. This is always plainly visible, but particularly so when winter has stripped the leaves and allowed the branches to stand out on the background of a cold sky." No one knows when the tree was planted, and nothing is known of its origin. The remarkable thing about it is, that in bark and in foliage this tree is almost identical with common forms of the so-called English Walnut (*Juglans regia*), while the nuts, which have a thick, rough and deeply furrowed endocarp or shell, and thick cell-walls, are not distinguishable from some forms of the nut of the Black Walnut; and the tree thus presents every appearance of being a hybrid between the American and the old-world Walnuts. The Walnut-tree cut last year on the grounds of the late Ben Perley Poor, near Newburyport, Massachusetts, mentioned on page 14 of vol. ii. of this journal, had the same peculiarities as the James River tree, and one of the stories told about the Newburyport Walnut was that it came originally from Virginia. There is another specimen of the same tree growing in the grounds of the Episcopal School of Harvard University, in Cambridge, of whose origin no one knows anything. The presence of American blood in these trees is shown not only in the nut, but in the fact that the Newburyport tree and the Cambridge tree are both perfectly hardy, and have grown to a large size, while the English Walnut in Massachusetts is precariously hardy, and, when it grows at all, never attains to any great size. We hope to publish a figure of the foliage and fruit of this interesting tree, but before doing so it is desirable to obtain as much information of its origin and of other individuals which may be growing in Virginia as it is possible to acquire. It is in the hope that some of our readers may be able to throw some further light upon the subject that this preliminary note is now printed.

Entrance to the Père-Lachaise Cemetery, Paris.

THERE are nineteen cemeteries in Paris, thirteen in the city proper and six in the suburbs. In the former the ground is granted in perpetuity, in the latter for a stipulated period only. The largest and most famous of all is the Eastern Cemetery, more commonly called "Père-Lachaise." It is not so ancient as is usually believed, having been laid out in 1804 under the direction of the architect Brogniart. The principal entrance, shown in our illustration on page 79, is a model of what such a construction should be—dignified, yet not obtrusive or showy, appropriately massive and severe, yet not gloomy-looking, and expressing its function in the emblems chosen for its decoration as well as in its general effect. According to French writers the aspect of the cemetery itself "is not in the least lugubrious," and they are certainly right in saying that the "majority of visitors consider it rather a promenade than a funereal spot." Nevertheless, to trans-Atlantic eyes it seems lugubrious enough by contrast with the open, park-like and cheerful look of even those American cemeteries which we think most sadly overcrowded. As can be divined from our picture, its alleys are thickly lined with tombs, many of them large and very ornate, and, though trees grow in abundance, there is little room for grass and none for the attainment of those open landscape effects which Americans think most desirable in a cemetery. Near the entrance the wall includes but a small space on the right hand, encumbered by various official buildings. But a little further on it bends sharply to the right and the corner thus formed is the Hebrew portion of the burial-ground. From the entrance there is a considerable ascent to a point occupied by the chapel, and thence the hill slopes toward the east and the newer part of the enclosure. This part is laid out in rectangular divisions, but in the older portions the alleys are winding, and, as they meet, form various open spots which relieve the general monotony of close-grouped memorials.

The Art of Gardening—An Historical Sketch.

XVII.—Ancient India.

THE luxuriant imagination of the ancient Hindu expressed itself in architectural forms which, while they lacked the purity of Greek and the intellectual suggestion of mediæval European types, have a brilliant, gorgeous beauty that harmonizes well with their semi-tropical surroundings. None of the Hindu remains antedate the time when stone replaced wood as the material of construction, and this seems not to have been ealier than the third century, B. C. But tastes and customs are peculiarly persistent in the East, and from their witness we can understand the rôle that gardening played in India in very ancient times.*

The simplest type of an old Indian garden was the enclosed court intimately connected with temple or habitation. The great Buddhist monasteries, where thousands of persons sometimes dwelt, were composed of an immense number of apartments surrounding open courts, and remains of their groves and huge water-basins may still be traced. A plan of a temple at Ramisseram, in the south of India, published by Fergusson,† shows a succession of enormous colonnades, 700 feet in length, encircling the main buildings and encircled themselves on two sides by a wide expanse of formally planted garden, all together being surrounded by a wall twenty feet in height. And everywhere we read of temple-enclosures filled with smaller temples, tanks, garden-plots, colonnades and fountains.

In such places as these the gardens were features in a great architectural whole; but there are others where the buildings were but features in the landscape. Here again, however, a true regard was paid to unity of effect. In no country, it may be said with especial emphasis, has the art of combining architectural forms with sheets of water been so perfectly understood. Both the value of the mere cool aspect of water in so hot a climate and the custom of frequent ablutions made it desirable that many buildings should stand near every lake and stream. Here temples, colonnades, terraces, kiosks and wide stairways for bathing purposes are harmoniously grouped together and beautifully composed against backgrounds of thick groves or sloping hill-sides. One of the palaces of Chittore, writes Fergusson (which were built in the fifteenth century, but by a prince of one of the old dynasties, and may be accepted, therefore, as representing an art of far earlier origin), "stands on the verge of an extensive lake surrounded by hills of great beauty of outline; and in the lake are two island palaces . . . which are more beautiful of their class than any I know elsewhere. It would be difficult to find any scene where art and nature are so happily blended together and produce so fairy-like an effect." Studying the pictures of Chittore and of many similar places, we realize that chance—the mere accident of a beautiful natural landscape—had little to do with the charm of the general result. Temple and palace were not left in isolation amid untouched natural surroundings. Platforms, terraces, stairways, walls and gateways formed the transition from one to the other; each adjunct was considered not only for its intrinsic beauty, but for its value as a feature in the general picture, and prospect as well as aspect was considered. The great palace at Oodeypur, for example, which lies in a district not overrun by Mahometan influence, "covers the entire crest of a hill, the base of which is washed by the blue waters of Lake Peshola; and this crest being insufficient for the full consummation of the architect's design, an immense terrace had been carried out on a level with it, and supported by three massive tiers of arched vaults."‡ The palace, as usual, consists of a multitude of different buildings and courtyards, and the whole is so arranged as to resemble "a vast

* There are no books to help out the witness of art. Indian literature, so very rich in many directions, includes no historical works.

† "History of Indian and Eastern Architecture."

‡ "India, Pictorial and Descriptive."

hanging garden. . . . A sparkling fountain is the central point from which avenues paved with white marble radiate in all directions, and rills of shining water flow in narrow channels until lost in the shade of Orange and Pomegranate-trees. . . . A marble gallery encircles this enchanting spot," whence the view embraces the whole valley; and "terraced gardens, crowded with summer-houses, pavilions and fountains, lead down to the lake, the shores of which are lined with fairy-like structures. . . . The arched roof of one of these . . . rests on a thousand slender columns, and all around it is woven a woof of shimmering, rainbow-tinted mist by the leaping waters of numerous fountains."

Formal flower-beds have always been a conspicuous feature in Hindu gardening, and have shown that keen sense for harmony as well as brilliancy in tint which distinguishes the race in all its artistic endeavors. Indeed, dwellers in a northern clime can hardly picture the gorgeous beauty of Indian color, produced by a combination of architectural and natural elements under the vivid blue of a southern sky.

Communication between China and India always existed to a certain extent; but the general trend of influence was eastward, not westward. The Chinese got much from the Hindus, but how much these may have received in return is far harder to decide. On the other hand, we know that ancient India was vitally affected by Persian ideas. The old Achemenid dynasty ruled to the Indus or beyond; Alexander's expedition influenced at least the outskirts of the peninsula; and the later Bactrian, Parthian, Seleucid and Sassanid dynasties followed up the work. Many elements of Persian origin can be found in Hindu architecture, and, as architecture has been affected, so has also been, in all parts of the world, the art of gardening. When Quintus Curtius writes of an Indian king it sounds like a description of some royal Persian: "His principal existence is hunting; amidst the vows and songs of his concubines he shoots animals which have been confined in a park."

On the whole, however, a distinctly national taste was doubtless expressed in the gardens of ancient India, for, despite all their borrowed details, such was the case with its buildings. The strong feeling for the picturesque and fantastic which is revealed by Hindu architecture as well as poetry had no parallel, as far as we can discern, in Persia. It speaks rather of the further East, finding its consummate expression in the gardens of the Flowery Kingdom. It is strongly illustrated in one or two pictures published by Fergusson. In some Indian districts the temples are not built, but excavated —dug bodily out of the solid rock of hill-sides. And here, at times, the approach is not by means of artificial steps and terraces, but between great boulders and free-growing trees, the effect of which is very like those "natural" arrangements which are typical of China and Japan. *M. G. Van Rensselaer.*

New York City.

Exotic Shrubs in Canada.

FRUIT-GROWING and the testing of the hardiness of fruit-trees and shrubs have received a good deal of attention in the Province of Quebec and in some parts of the lower provinces of Canada, but comparatively few trials have been made of the hardiness and value of many other trees and shrubs not indigenous, but which might prove useful and ornamental. In some old gardens about Montreal it is not unusual to find specimens of shrubby or arborescent plants which have been brought over from Europe; but, as many of these were imported from the south of England or other stations almost equally mild, instead of from the most northern countries possible, they are too often poor specimens, and unsatisfactory on account of lack of hardiness.

Few persons have experimented with any considerable number of species, but the recently organized agricultural experiment-stations of the Dominion and the proposed botanic garden at Montreal give reason to hope for some systematic experiments and reliable data in the near future. The winters at Montreal are not so severe as many people suppose, and an examination of isothermal charts and of Dr. Robert Bell's map giving the general northern limits of the principal trees of the Dominion shows this clearly. Nevertheless, when compared with the climate of eastern Massachusetts that of Montreal seems quite severe—severe enough to prevent many plants from flourishing which do admirably in the Northern States.

Three years ago a box of small specimens of some foreign trees and shrubs were sent from the Arnold Arboretum to a garden on the south side of the St. Lawrence River, opposite to and within ten miles of Montreal. Some of these plants died soon after they were received and planted, because the season was an exceedingly unfavorable one for plants not already well established; and all those belonging to the Heath family were lost during the first year on account of the lime in the soil, a limestone region or calcareous soil being fatal to all, or almost all, the *Ericaceæ*.

An examination of the surviving plants a few weeks ago furnished some interesting comparisons with the behavior of the same species in the Arboretum at Boston.

A most interesting example is afforded by the small plants of the rare Yellow-wood (*Cladrastis lutea*) of Kentucky and Tennessee, which appears to grow freely and ripen its wood, and seems perfectly hardy in a most exposed situation without any natural or artificial protection. It promises to be a valuable addition to the small ornamental trees at the north. Attempts have often been made to introduce the beautiful Laburnum from European gardens, but so far without even the poor success which it sometimes obtains at Boston. It is almost invariably winter-killed to the ground.

The appearance of *Cercidiphyllum Japonicum*, still so rare in cultivation, gives much promise that it will be of ornamental value and interest at the north. Although the ends of some of the branches seem to have suffered in winter, the little plant sent from the Arboretum is now eight or nine feet high. The seed of this inconspicuous-flowered representative of the Magnolia family came from one of the northern islands of Japan, and the hardiness of the plant so far north in this country leads to the hope that *Magnolia Kobus*, from the same region, as well as other untried northern-Japanese plants, may be able to withstand the winters north of latitude forty-five.

The Japanese *Acer polymorphum*, when not overfed or grown too fast, seems about as hardy as at Boston, where, as a rule, it is not very satisfactory, although always interesting.

The valuable collections of seeds made by Dr. E. Bretschneider in the mountains about Pekin, China, have already been referred to in GARDEN AND FOREST, and among these were stones of a Peach which he found growing wild. The plants in the Arboretum raised from some of these seeds have thrived and fruited, and a grafted plant sent to this Canadian garden now forms a good sized bush, and has not yet shown any injury from the severity of the climate. The fruit of these Chinese seedlings is white, medium-sized, poor in flavor and has a large stone; but if the plant proves hardy it will be a valuable acquisition and a good stock upon which to begin improvements. The Peach has not been grown in the open air at Montreal except in rare cases, where it has been trained to a wall and well covered in winter.

The common Quince is not successfully grown in the climate of Montreal, and this is also true of the Japan Quince (*Pyrus Japonica*), which has so far not proved as hardy and beautiful as at Boston. The plants live, but are prostrate in habit because usually badly killed in winter. They may thrive in some favored situations, as excessive moisture and late continued growth are very often the destroyers of shrubs which under opposite conditions seem hardy.

Rosa blanda is the common native wild Rose of the region under consideration, and, of various foreign species of Roses tried, none have proved so hardy and thoroughly reliable as *Rosa rugosa* and its white variety. The plants attain as large size as they do in southern New England, and they retain the habit of producing a few flowers throughout the summer and autumn after the regular season of profuse blooming. Near Montreal they have grown for at least ten years without showing the slightest injury by winter cold, and they seem hardy enough to grow in Labrador. Indeed, they are reported as perfectly hardy at St. Petersburg, which, having a winter climate which averages but little colder than that of Montreal, although with greater extremes, is situated in the latitude of sixty degrees, corresponding to the northern shores of Labrador or the southern extremity of Greenland. The red foliage of *Rosa rubrifolia* makes this species attractive and interesting to many people, and it has proved hardy.

Rosa multiflora, of Thunberg, has sometimes had part of its branches killed, but is sufficiently hardy to bear an abundance of blossoms every season. In some situations it would probably be uninjured even so far north.

The Sweetbrier Rose (*R. rubiginosa*) must have been introduced to the vicinity of Montreal many years ago, as it has escaped from cultivation and is growing quite commonly and vigorously in some pastures. The pretty Japanese *Spiræa Thunbergii* appears to be quite hardy, and is a valuable addition to the shrubs. Some other foreign species of Spiræa do well, especially those which are natives of comparatively high latitudes.

The Caraganas from Russia and from Siberia are naturally perfectly hardy. *Caragana arborescens* and *C. frutescens* be-

come quite large shrubs, and, when laden with their yellow Pea-like blossoms, are quite ornamental, being, perhaps, the best yellow flowered shrubs to use as substitutes for the desired Laburnum.

Deutzia gracilis, being of dwarf habit, is usually well protected by snow, and rarely fails to blossom as well as at the Arboretum; but the large growing *Deutzia scabra* (also found in catalogues as *D. crenata*, *D. Japonica* and *D. Sieboldiana*), although it usually bears some flowers, is very liable to have its shoots killed in winter to within a foot or two from the surface of the ground. This also occurs about Boston, if the plants are situated in low or very moist ground, where growth is prolonged and the wood does not fully ripen before winter. In favored situations at the north it may prove quite hardy.

The common varieties of Mock Orange (Philadelphus) and the Tartarian Honeysuckles grow as luxuriantly as they do several hundred miles further south, and the Dutch Honeysuckle (*L. Periclymenum*) blooms freely every year if lowered from its trellis to the ground in the autumn and given a slight winter covering of leaves or branches where the snow does not remain.

The great-flowered form of *Hydrangea paniculata* does very well where the soil is not too wet and it is not forced to too vigorous growth; and some varieties of Weigela (Diervilla) are moderately hardy when grown under the same conditions.

Forsythia viridissima seems to do best when given a slight protection in winter—pegging to the ground being sufficient where it is covered by snow.

The Holly-leaved Mahonia (*Berberis Aquifolium*) is as badly winter killed as it is about Boston, and needs much protection from sudden changes of temperature in winter and from the consequent freezings and thawings. Plants of *Tamarix tetrandra* seem quite hardy, and have flowered freely though still small. Its hardiness is to be expected, as it is said to be a native of high latitudes and altitudes.

Most of the shrubs mentioned have received only partial protection from the snows of winter, and they have stood from twenty to twenty-five degrees below zero when there was very little or no snow on the ground.

Some of the smaller shrubs, such as the Flowering Almond, Woad-wax (*Genista tinctoria*), *Cytisus purpureus*, *C. nigricans*, *Euonymus nanus*, *Vinca minor*, etc., receiving more natural protection than the taller species, are hardy and satisfactory. Doubtless some seemingly half-hardy species may be grown in sheltered gardens of cities like Montreal and Quebec; but, in exposed places, soil and situation are as important as difference of degrees of latitude, and well drained ground and slow growth, leading to thorough ripening of wood, are the greatest protections many trees and shrubs require. *J. G. J.*

Arnold Arboretum.

Vanda cœrulea.

THIS Vanda is undoubtedly the handsomest of the comparatively few blue-flowered Orchids. In former years it was rarely grown in such thrifty condition as it is now met with, and the failures with it were chiefly due to the great heat to which the plants were subjected. Coming from the Khasya Hills, where it is found at an altitude of from 3,000 to 4,000 feet, it naturally requires little heat and delights in a free circulation of air. The illustration on page 77 is from a photograph of a fine specimen in the collection of Mr. Hicks Arnold, of this city. It is in superb health, two feet high, and furnished to the bottom with perfect leaves. Last autumn it bore, on four spikes, fifty well developed flowers of a clear, azure blue color. The plant has been in Mr. Arnold's collection for two years, and has grown very rapidly. It is placed where it receives plenty of light and air, and that it thoroughly enjoys the position may be inferred from the numerous roots that show themselves outside the basket.

Foreign Correspondence.

London Letter.

THE enormous demand for flowers in winter in England is taken advantage of by foreigners in the same way as is the demand for fruits and similar commodities. In Italy, southern France, Spain, and even Algeria, the production of flowers for the English and other northern markets during winter has lately become an important industry. Besides these there are also large flower-farms in the Scilly Islands, where Grapes, Pears, early Potatoes and vegetables are largely grown solely for English consumption. The development of the flower-farms in these islands is the subject of an interesting communication to the *Gardeners' Chronicle* by Mr. W. Roberts. When ordinary farming proved a poor business, market-gardening was tried, but it was not until about ten years ago that the cultivation of flowers for exportation was commenced in earnest. Enormous quantities of the flowers of Freesias, Anemones, Wallflowers, Roses and Persian Ranunculuses are now sent from these islands to England, and to the uninitiated are the cause of much wonder when seen on every stall and in every flower-dealer's window in February and March. But the flowers which are grown in greatest abundance, which find the readiest market, and which prove most profitable to the growers, are the Narcissi. Every available bit of ground is planted with the bulbs of these plants in various kinds, and from November right on to May they are the glory of the islands. The bulbs are planted from two to four inches deep and six inches apart; they are not manured, except by the decay of their own leaves. They are dug up, divided and replanted about every three years. It is supposed that $1,250,000 is now invested by the Scillonians in these plants alone. Some 15,000 boxes of flowers of Narcissi are sent to England from these islands every year, as many as 500,000 spikes having been sent by one man in a single consignment. The spikes are tied in bundles of twelve and packed neatly in boxes. It is stated that during the winter season from ten to fifteen tons of cut flowers are sent to the English market from the Scilly Islands in a single day. By taking advantage of the English demand for flowers, and supplying such as carry and keep well, and which are popular, the inhabitants of these islands have shown how such a slight advantage as they possess in regard to climate, when compared with England, may be turned to the very best account. The market value of the flowers of these Narcissi varies from three pence to three shillings per bunch of twelve.

The following plants are now flowering freely at Kew in an unheated greenhouse, where early flowering tender alpine and herbaceous plants are accommodated. A house of this kind may easily be made one of the most charming features of the in-door garden during winter and spring. Hellebores, both of the Niger and Orientalis (or Lent Lily) sections, are abundantly represented by large masses crowded with flowers. *Hepatica triloba*, in white, purple and blue forms, two or even more colors sometimes occurring on the same plant, is conspicuous. *Milla uniflora* is a tuft of rich green leaves and numerous milk-white, star-shaped flowers. *Primula Fortunei* is the rarest and most interesting of the Primroses now in flower; it is in the way of *P. denticulata*, but has looser heads of lavender, yellow-eyed flowers. *P. obconica* is grown in quantity. The poisonous properties attributed to this species have never been experienced at Kew. Crocuses of many kinds and *Narcissus minimus*, with its delightful little trumpets, are other plants which now help to make this house one of the chief attractions at Kew.

ORCHIDS.—Public auction sales of these plants do not appear to be nearly so remunerative now as they were about twelve years ago, when those engaged in the work of collecting and importing Orchids were so few as to be able to practically control the market. Where there was one importer of Orchids in those days there are perhaps twenty now, and the consequence is that many of them find difficulty in getting their plants sold at anything like remunerative prices. In the early days, when Stevens, of Covent Garden, was the only auctioneer of Orchids, and when Low, Bull, and latterly Sander, were the only importers, it was nothing unusual for the whole expense of collecting and bringing to England a quantity of Orchids, with a handsome profit besides, to be realized at the first public sale. Then such prices as ten, twenty, fifty, and even one hundred guineas for a single specimen were not unusual. The game paid too well for it to long remain in the hands of a few, and now there are so many importers that a considerable proportion of them can scarcely make Orchid-importing pay. Although the cost of collecting and transporting these plants from distant lands is not now so great as it was a few years ago, yet an expedition to such countries as upper Burmah, Madagascar, New Guinea, or even to some parts of South America, requires an outlay of some hundreds of pounds, not to reckon the risks to the health and even to the lives of the collectors, before a quantity of plants are landed safely in England. Even then it is not an uncommon occurrence for nearly all of the plants to be dead on arrival or too sick to recover. Only this week I have learned of a case of this kind. A well known and very successful importer informed me that a lot of Orchids from Central America, which recently arrived in good condition, was the third attempt to get these plants home alive, two previous attempts having proved complete failures,

Fig. 17.—Vanda cœrulea.—See page 76.

although each one was as expensive as the last. And now comes the disheartening part. These plants, obtained at such an outlay, when placed in the market have not realized anything like the sum spent in collecting and importing them, apart altogether from losses on the other attempts. Another similar case is that of Mr. Wallace, of Colchester, who has just returned from collecting in tropical west Africa, and has succeeded in bringing to England about sixty plants of an Angræcum new to cultivation, and a very fine thing. These sixty plants are all that survived of some thousands collected. In the auction rooms the prices these rare Orchids brought were absurdly low; I do not think they would more than pay the cost of packing and freight. Again, it sometimes happens that on the eve of a sale of an importation of Orchids information of a second, or even third, importation is made public. People who are astonished at the exceptional value of an Orchid, do not take into consideration the difficulties and cost of bringing the plants to England. Many of them are as rare and as difficult to get at as diamonds.

Angræcum pallidum.—This is the Orchid which Mr. Wallace, of Colchester, has just brought from the west coast of Africa and offered for sale at the auction-rooms this week. It has fleshy, strap-shaped, distichous leaves nearly two feet long, two and a half inches wide in the broadest part and shining green, and is in the way of, but larger than, *A. pellucidum*. The flowers are produced on thin spikes two feet or more long, some of the imported plants showing no less than thirty dried spikes; each spike bears about sixty flowers, which are creamy white, almost transparent, apparently about as large as those of *A. Sanderianum*. In bloom the plants are said to present a grand appearance. Judging by the imported plants, I should say that *A. pallidum* is a gigantic *A. hyaloides*, which is peculiar amongst cultivated Angræcums in producing erect spikes of white flowers in great profusion from the base of the plant. If *A. pallidum* proves amenable to ordinary stove treatment—and there is no reason to doubt that it will do so, since the other tropical African Angræcums are easy to cultivate—it will be a valuable addition to the already numerous species of this genus now in cultivation.

Maxillaria Sanderiana.—Hitherto this plant has been very rare, only one or two growers having saved plants of an importation of Mr. Sander's some six years ago. Probably excessive heat caused the death of most of the plants, the general belief being that this species required tropical treatment. It is happiest in an intermediate house, or say, along with Cattleyas. Messrs. Shuttleworth, Cardes & Co., of Clapham, have just succeeded in importing a good lot of this species, so that it should henceforth be as popular as other Maxillarias. It is one of the very best of the genus, having flowers as large and of as much substance as those of *Lycaste Skinneri*; they are five inches across, pure white, the lip and lower part of the segments deep crimson. The species is a native of Peru.

Cypripedium Godefroyæ.—When first introduced some seven years ago this pretty little species found many purchasers at from five to ten guineas a plant. This week I saw it sold at the auction rooms, newly imported plants in fine condition, at from three pence to six pence per plant. Most growers prefer the newer and handsomer *C. bellatulum*, a near relative if not actually a variety of the former. In England it is not easy to keep these and other Cypripediums of this section in good health during the winter; they are singular in the genus in their love of bright sunshine, of which we have, as a rule, very little in winter—at any rate, in the near neighborhood of London. The natural conditions for *C. Godefroyæ* are "on the cliffs of a limestone island, where, after about ten o'clock A. M., they are exposed till sunset to the full glare of a tropical sun."

W. Watson.

London.

Cultural Department.

Ericas.

THE Cape Heaths have always held a prominent position among greenhouse flowering plants in England. They were much more popular in the early part of this century than they are now, although a select few of the easiest to manage and with showy flowers are still grown in immense numbers, especially in the neighborhood of London. There are also still a few private gardens where a good representative collection of Ericas is cultivated.

The genus is said to comprise some 400 species. Of this number no less than seven-eighths are found in the south-western region of the Cape. This region is an angular littoral strip, extending from Port Elizabeth to Oliphants River and with an average width of fifty miles. Nearly all the best of garden plants from south Africa are found here. The showiest of the Ericas are, according to Bolus, found on the mountains; *E. cerinthoides*, *E. mammosa*, *E. coccinea*, *E. spumosa* and *E. hirta* being the most abundant; the last named making whole mountain-sides glow with its warm pink-colored flowers. In England a similar effect is produced by the rich glowing purple of our native Heather, which covers miles of moor and hill-side.

According to Aiton there were close upon 200 species of Cape Ericas in cultivation here in 1810; about half of this number having been sent home by Francis Masson, who collected at the Cape for Kew. Loudon, in the "Hortus Britannicus," enumerates no less than 565 species, so called, as having been cultivated in England, 348 of which were figured in the *Botanical Magazine*, Andrews' "Heathery" and other works. The position in horticulture held at that time by these plants was evidently an exceptional one.

The art of cultivating Cape Heaths appears to have been acquired in England almost from the date of their first introduction. Specimen plants six feet through and as many high, in splendid health and full of bloom, were common features at plant exhibitions forty or fifty years ago, and now and again such specimens are to be seen in English collections to-day. Whether some peculiarity of climate or other conditions favors the growth of these plants in England and Scotland, it would be difficult to say, but certainly in no other country, not even at the Cape itself, are such specimens of Ericas to be seen as are produced by cultivation in England. The principal introducers and dealers in Cape Heaths in England were, after Kew, Messrs. Lee & Kennedy, Low, Rollisson, and Fraser. In addition to the species, a large number of hybrids and seedling varieties were raised in England, chiefly by Rollisson, Turnbull, Marnock and the McNabs. Many of these eventually superseded the species, and to-day one may safely say that of the Ericas represented in English gardens considerably more than half are hybrids of garden origin. It has been computed that of species, hybrids and varieties something like one thousand kinds of Erica have been known and grown here.

The Kew collection of these plants contains probably every one of the true species in cultivation in England and a good number of the hybrids and varieties. Altogether they number 142.

The beautiful colors, elegance of form and other charms of many species of Cape Ericas are, to some extent, depicted in the large edition of Andrews' "Heathery." These drawings, however, beautiful though they are, fail to convey any idea of the ornamental character of well grown specimens when well flowered. Such kinds as those mentioned at the end of this paper have very few equals among greenhouse flowering plants. Ericas, when properly treated, flower very freely, and their blooms remain fresh a long time, either when cut or when left on the plants. Many of them flower at a time when they are of exceptional value. No well furnished conservatory in winter can fail to show plants of such kinds as *E. hyemalis*, *E. colorans*, *E. hybrida* and *E. persoluta*. By selecting the plants according to their flowering season, one might easily have a few examples in flower at all times in the year.

The cultivation of Cape Heaths is not nearly so difficult as is popularly supposed. Where their requirements are properly understood they are grown by the thousand, by men of the rank of garden laborers. They are all what are here termed cool greenhouse plants, requiring a minimum temperature a few degrees above freezing point, and during hot weather exposure to full sunshine in the open. When under glass they must have an abundant and regular supply of fresh air; the atmosphere also should be kept as dry as possible. They thrive only when planted in good rich peat, made very porous by adding plenty of sharp silver sand. The pots should be well drained, and the soil made as firm as possible with the hand. Potting sticks, unless very carefully used, are often the source of much injury. The time to repot is from January to March. Free-growing kinds, such as *E. hyemalis*, may be shifted annually into pots two or three sizes larger than those they are in; but the slow-growing, hard wooded kinds do not require more than one size larger each year. From the mistaken belief that when a Heath dies it is the result of over-watering, beginners often err by keeping their plants too dry. When in good health Ericas require as much moisture at the root as most plants; but the soil must be kept sweet and never allowed to become water-logged. Avoid extremes in regard to watering and Ericas have what they require. During summer the free-growing kinds should be watered occasionally with weak manure water.

Ericas often grow leggy and thin because they have not been cut back or stopped sufficiently. The hard-wooded kinds should have the points of their strongest shoots removed soon after the flowers are over and growth has started again; the soft-wooded kinds should be cut back hard a few weeks before they are repotted, and kept a little warmer until they break. Mildew is the greatest enemy of these plants; it may be kept under by means of sulphur. Prevention is, however, better than cure, and if the plants are well supplied with fresh dry air they will not suffer much from mildew.

A selection of the best of the Ericas now known in gardens would include the following:

Soft-wooded.—*E. Caffra*, *E. Cavendishiana*, *E. cerinthoides*, *E. colorans*, *E. Ewerіana*, *E. gracilis*, *E. grandinosa*, *E. hybrida*, *E. hyemalis*, *E. melanthera*, *E. perspicua*, *E. persoluta*, *E. ventricosa*, vars., and *E. Wilmoreana*.

Hard-wooded.—*E. Aitoniana*, *E. ampullacea*, vars., *E. Devoniana*, *E. effusa*, *E. extmea*, *E. Fairieana*, *E. Jacksoniana*, *E. jasminiflora*, *E. Kingstoniensis*, *E. McNabiana*, *E. Massoni*, *E. Marnockiana*, *E. ovata*, *E. retorta*, *E. Shannoniana*, *E. tricolor*, vars., *E. vestita*, and *E. Victoriæ-Reginæ*.

These would form a good collection to begin with. Probably a hundred kinds, all first-class flowering plants for the greenhouse, could be got together even now, for there are still a few nurserymen in England who grow a good collection of Cape Heaths.

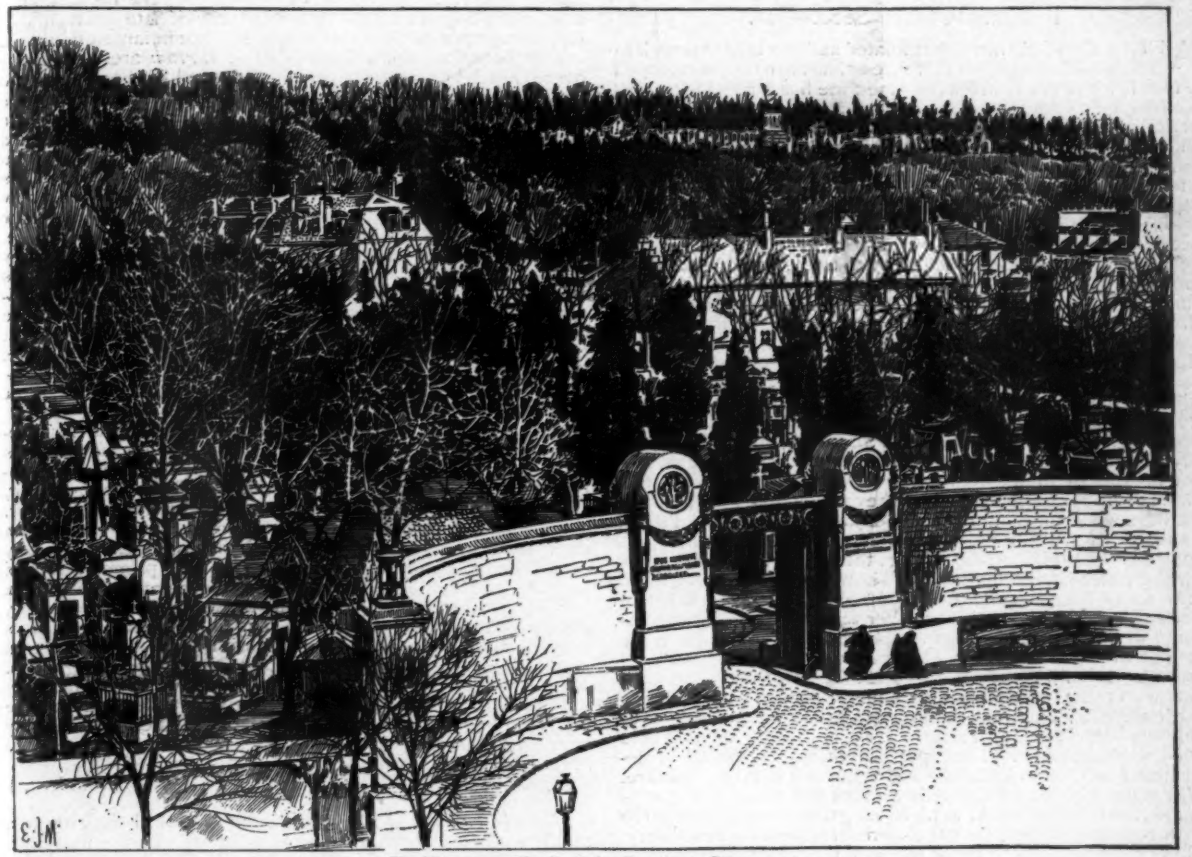
Kew. *W.*

Grafting.—There is no proof that a tree which is liable to injury in our trying climate can be made hardier by grafting it on an iron-clad stock, but top-working is of advantage in more than one way. In our interior climate, trees doing well under forest conditions as to shade of stem may utterly fail when the stems are exposed to the direct rays of the sun and hot south-west winds when isolated on the open prairie. As an instance, the Buffalo berry (*Shepherdia argentea*) is plentiful on the banks of the upper Missouri, growing thickly like Hazel brush; but when planted by itself in our yards with a stem three feet in height it is certain to be dead on the south side of the stem in three years. But top-worked on the Asiatic species (*Elæagnus angustifolia*), even at a height of six feet its stem will remain perfect. Of this we have examples, in many directions. In fruits some varieties fail in stem which are perfect in top. In such cases top-working on stocks that are proof against sun and wind is an evident advantage.

Top-working is an advantage in another way on our extremely varied soils. As an instance, the Gros Pomier Apple does remarkably well on sandy land where many sorts utterly fail. Working the sorts that fail on sand on this stock seems to meet with success.

Again, the Tetofsky Apple does well on low, wet prairie land where most other sorts fail, and experience has shown an advantage in using it as a stock on such soils. In Silesia this adaptation of fruit-tree stocks to varied soils has reached greater perfection than in any country of which I have information.

Iowa Agricultural College. *J. L. Budd.*



The Entrance to Père-Lachaise Cemetery.—See page 74.

Perennial Pyrethrums.—There are few hardy plants that have lent themselves so kindly to the skillful manipulation of the florist and been so obviously improved thereby as the parent of this useful race of hardy plants, *Pyrethrum roseum*. Indeed it is a mystery how, from this, the original species, a pretty thing in itself, much resembling a rose-colored Ox-eye Daisy, such beautiful varieties have been obtained, notably the one with large, double white flowers with not a tinge of color to mar their snowy purity and others of the brightest crimson and all the various shades between the two. Their cultivation is extremely simple, as it is only necessary to plant them in good soil well enriched and leave them alone, to become possessed of fine strong clumps, and it is from these that good and satisfactory results may be anticipated. The flowering period of these Pyrethrums extends over the whole of the summer season, and this is a trait worthy of special notice when one considers the durability of the flowers in a cut state. When it is desired to increase the stock of plants none but strong clumps should be selected for this purpose, and the

operation is best performed in spring, as early as possible, when the plants may be taken up, care being taken to secure roots to each portion of the plant. These may then be replanted and the operation will prove beneficial if carefull performed. Pyrethrums may also be easily raised from seed if it is fresh and of a good strain, such as sent out by the large European seed-growers. All of the plants will not produce double flowers, still the single ones are exceedingly pretty and useful, and indeed some growers are making a specialty of single varieties. Some of the older double varieties named below are still as good as any that can be found either in catalogues or gardens. The two best white varieties are Mount Blanc and White Aster, while Captain Nares, Emilie Lemoine and Progress are among the best reds, and Ne plus ultra, Iveryana, Dr. Livingstone and La Vestal are all good shades of pink and lilac; J. N. Swerdy is a brilliant red and good. All of these we have grown and find them as good as the best. Each year adds new kinds to the already long list.

Passaic, N. J. *O.*

Perennials from Seed.—III.

AFTER the seeds have germinated and are large enough to handle—that is, when there are at least two fully developed leaves besides the seed-leaves—the time has arrived for transplanting or pricking out into boxes or pots. This is a critical period in the life of the plant, and inattention then often results in a weak or spindly growth, which necessitates weeks of nursing and care to strengthen and enable it to stand the hot sun sufficiently to bear planting out permanently. This is especially true when, as sometimes happens, the seeds come up thickly in the pan. If the rougher portion of the soil has been used as drainage to the seed-pan, the young plants can be separated easily without injury to a single root, but when moss or leaves are used there is great difficulty in disentangling the roots, and the young seedlings receive a severe check. Three-inch pots are the most suitable size if the plants are of strong, robust habit, such as Delphinium, Coreopsis, Hollyhock, Papaver and Lathyrus. In pots of this size the young plants will grow strong and form a mass of roots that will defy any period of dry weather that may ensue if they are well watered before planting. The best soil is two-thirds good loam and one-third leaf-mould. Should the plants be naturally tender-rooted, it is best to place them at the side of the pot instead of in the centre, for the young roots love to feel the side of the pot, and when they find the way around it is the time when the plant seems to enjoy life the most. For all small, dwarf-growing plants of alpine character two-inch pots are large enough. After potting, the young plants will need careful watering, although water should never be given until they really need it, and during bright sunshine a sheet of newspaper should be thrown over them until they have become well established. The temperature should be the same as that in which the seeds were raised—fifty-five to sixty degrees by day and fifty by night—until the plants have filled the pots with roots, when they may be kept cooler and gradually hardened off. The final planting out may be done as soon as possible after the departure of frost and when the soil is in good working order. Their permanent places should be determined beforehand, and the soil made rich with fine manure. Where large collections of hardy plants are grown it is always found best to set apart a piece of ground, away from the flower-garden proper, for use as a reserve ground or nursery, where seedlings can be cared for until they reach their normal size and strength. From this they may be moved to any desired situation without any fear as to their ultimate success. This is a plan that should be adopted by all who can spare the space, for gaps are sure to occur in the borders every season, and one has only to turn to the reserve ground to fill them all up, and if a friend wishes to exchange, a young thrifty plant is always available for that purpose. Should any new or rare plants be received, and they are planted among established plants, the food provided for their nourishment is speedily devoured by their hungry neighbors, whereas if nursed by themselves, with others newly planted, all have an equal chance. The reserve ground will be found useful, too, when cut flowers are wanted, and this saves the border from depletion. When planting we make a trench with the spade, put manure in the bottom, and cover with an inch or so of soil. Then we place the plant against the side of the trench, and if the roots have not been confined in a pot we spread them out and cover first with the finer soil, and when sufficient soil is in, press sidewise with the foot until it is firm. When the roots start they will be attracted downward by the manure, where they will remain out of the reach of harm from dry weather or other trying climatic conditions. When the plants have balls of soil attached to the roots they may be planted in the same way, but care should be taken that the balls of soil are not broken. When treated as we have advised hardy perennials may be raised from seed as easily as annuals, and there is no reason why they should not be grown in every garden.

Passaic, N. J. *E. O. Orpet.*

Orchid Notes.

Oncidium curtum.—It is not often one meets with this remarkably showy species in cultivation, and perhaps less often is it seen in a fine condition. When well grown it is the equal of such handsome and popular plants as *O. Gardneri*, *O. crispum* and *O. prætextum*, and is one of the most attractive Oncidiums known.

The "crop-eared" Oncidium, as Dr. Lindley designates *O. curtum*, first found its way into cultivation in the year 1847 through Messrs. Veitch, of Exeter, through whom it first flowered, but who at the time gave no information respecting its native country. After this it appears to have become very scarce or altogether lost; and it is only of late years that it has been imported from Brazil, but still not in large quantities.

The botanical characteristics of *O. curtum* are its oblong-ovoid, much compressed pseudo-bulbs, which become more or less furrowed with age. One or two oblong-lanceolate leaves are borne on the summit of each, and from the base arises the branching scape, which attains a length of one and a half to two and a half or more feet. Several flowers closely arranged are produced, and measure about two inches across. The upper sepal is oblong-elliptic, wavy, with a few transverse rich brown blotches on a pale, greenish yellow ground. The two lower sepals are connate beyond the middle, and are colored and blotched like the upper one. The broadly obovate petals are rich chestnut-brown, with a conspicuous irregular border of bright yellow. This latter color predominates in the large reniform lip, which is deeply cleft in the centre, and adorned with a row or two of irregularly shaped chestnut-brown blotches all round the undulated margin. At the base is a dark red-brown zone surrounding the dark purple warty protuberances which form the crest, on each side of which is a golden yellow auricle.

During December last several good specimens of this species were flowering here, some of them carrying as many as sixty and seventy blooms on a spike; but the average number was about thirty. This is not the usual season, however, for *O. curtum* to produce its flowers, but about April and May. The plants in question were imported ones, and flowered from their native pseudo-bulbs. Plants which have been thoroughly established in cultivation begin to make new pseudo-bulbs in January, and as the weather becomes more genial the growth becomes more rapid, and is fully made about June or July, after which they begin to ripen. Up till this time the plants may be freely watered, beginning with small quantities and gradually increasing them according to the vigor of the growth. As the winter approaches the supply of water is gradually diminished, until the plants require very little, and at rare intervals. The temperature during this latter season may vary from sixty to sixty-five degrees Fahr., rising to seventy to seventy-five degrees in the summer months.

St. Albans, England. *John Weathers.*

Miltonia cuneata is a very desirable Orchid, belonging to a much neglected genus, if we except those species that until recently were called Odontoglossums. The subject of this note has been known to gardens since 1843, in which year it was introduced from Mexico. This plant evidently enjoys great heat and much water during the growing season, and it thrives best in small baskets, with very little potting compost, which may consist of very sandy peat. It is an erect growing plant, with conical bulbs, and pale green, thin, leathery leaves about a foot long. The erect scapes spring from each side of the base of the bulb, and bear seven to nine handsome flowers distantly placed along each side of the rachis. The narrow sepals and petals are dark chocolate, tipped and barred with yellowish green; the wedge-shaped lip is pure white, tinged with pink near the base. The flowers last quite a long time in water, and are very suitable for cutting.

Kenwood, N. Y. *F. Goldring.*

Anemone blanda and Iris Bakeriana.—Both these are excellent winter-blooming plants. If potted at intervals from August to September and housed afterward in a greenhouse they may be had in flower from November to February. *Anemone blanda*, a near relative of *A. Apennina*, is a native of the Levant, and has the advantage over the latter of flowering

in the open air, four or five weeks earlier—that is, about the second week in March—with me. The plants form a low mass of palmate, much-divided leaves, and the deep blue flowers are from three-fourths of an inch to an inch in diameter. *Iris Bakeriana*, a native of Kurdistan, was introduced by me only two years ago. Treated in the same way as the Anemone, it will flower at the same time. It is a near relative of *I. reticulata*, has lavender standards, white falls blotched with blue, and a deep blue-black tongue. It is powerfully violet-scented when the sun shines upon it, and is very beautiful on account of the harmonious coloring of the flower.

Baden-Baden. *Max Leichtlin.*

Correspondence.

Forestry Matters in New Hampshire.

To the Editor of GARDEN AND FOREST:

Sir.—The Forestry Commission has held two public hearings—one at Littleton, in the heart of the mountain summer resort region, the other in Manchester, the largest city of the state. The leading men of Littleton attended, with many from adjacent towns, and there was a large and spirited meeting. After brief addresses by members of the Commission there was a general expression of interest in the preservation of the forest scenery as the chief attraction for summer visitors. The importance of good roads and of keeping the roadsides and adjacent forests in an attractive condition was urged, and a plan was suggested for the employment of an equipped organization of firemen in each town, under the direction of a state officer, the men to be paid when in actual service fighting forest fires. Most of those present seemed to think favorably of judicious and limited action by the state, but the main emphasis was upon the necessity of individual effort and the importance of action by the towns of the region in improving the local conditions, and thus making the mountain country more interesting and agreeable to visitors.

Some of the men who had all their lives been familiar with the mountain woods, emphasized the fact that fishing is one of the principal attractions for many men from the cities, and that cutting off the forest at once puts an end to the fishing throughout the area thus uncovered. As the fish can live and thrive only in the shade, they leave the streams at once when the sun is let in and warms the water.

At Manchester the manufacturers, merchants, lawyers, bankers and newspaper men of the city were well represented, and there were many farmers from remote towns. Some of these had had experience in tree planting, and the meeting was much interested in their description of methods and results. The love of trees and feeling of delight in them, without which it is so difficult to do anything in forestry matters, was very manifest at this hearing, and if those who are thus vitally interested can be brought into co-operation with each other something may be accomplished.

There is more intellectual movement in New Hampshire of late than for many years before, more thought about the general interests of the people of the state. The agitation regarding forestry subjects and the discussion about abandoned farms mutually stimulate each other. It happens that circumstances bring home to us here with unusual directness the close relation between good taste, beautiful scenery and the qualities of an advanced civilization on the one hand, and the means of subsistence on the other. This is the situation in briefest terms—while our mountain forest-scenery is preserved it attracts multitudes of visitors, and sustains a summer resort business which brings into the state perhaps two millions of dollars every year. This revenue goes into general circulation and thus benefits the whole state. But if the forests are destroyed there will be no beauty or attraction here for anybody. The tourists and boarders will go elsewhere, and our mountain hotel property will be worthless.

But the owners of forest-lands do not keep boarders; they depend on the sale of their timber for their means of subsistence. So here are conflicting interests. The only way out that appears practicable is for the lumbermen to cut off the woods by an orderly method and system, not all at once, "smack and smooth," as the axeman's phrase is, but by taking out the large timber and leaving all below a certain size to grow for another crop. Handled in this way the forests will yield perpetual revenues. The lumbermen can be always cutting, and yet forest conditions will never be destroyed. The ineffable charm of the mountain scenery will be permanent. The myriads of visitors will return year after year, and successive generations of their families will seek a summer dwelling among our hills.

The danger is that we shall not adequately appreciate the necessity of popular education in the broadest sense of the term, of the general propagation of right ideas regarding the facts of the case, and all the interests and relations involved. It is indispensable that the lumbermen and owners of timber lands should be engaged and interested in the movement for the preservation of forest conditions in the White Mountain region. The lumberman's right under the law to do what he will with his own is invincible. If he should not help us, but stand stubbornly on his right to cut off his own timber in his own way, and to make a desert of his own domain if he chooses, we should accomplish very little. We must secure his co-operation, or the practical results of our efforts will be but slight.

Franklin Falls, N. H. *J. B. Harrison.*

A Late African Novelty.

To the Editor of GARDEN AND FOREST:

Sir.—I notice in your excellent paper for January 29th an account of that much bespoken novelty, *Kalanchoe carnea*, which impels me to say that a reasonably extensive experience leads me to consider it one of the least satisfactory introductions of the last thirty years. Beauty is not a quality either of its flowers or its foliage. The color of both is washed out and mawkish, the perfume of the flowers is agreeable but weak, though of the many exaggerated statements that have been circulated concerning the plant, the common account of its fragrance is perhaps the least beyond the truth.

I enclose a photograph of the plants of Kalanchoe that have been cultivated in my greenhouses, so that you can see that I do not speak without knowledge; and my advice to other cultivators is to choose some other subject for hope and experiment.

New York. *C. A. Dana.*

Spanish Moss in Northern Tennessee.

To the Editor of GARDEN AND FOREST:

Sir.—In August of last year, while engaged in geological work along the Cumberland River, I came across a locality where the beautiful, pendent tufts of *Tillandsia usneoides* abound. It is on the face of a great limestone bluff which overhangs the river, and has a full southern exposure. The bluff, known to boatmen as the "Checkered House Bluff," is something more than two miles below Cumberland City, in Stewart County, Tennessee, and about fifty miles a little north of west from Nashville. The face of the bluff has a scattered growth of Cedar, Oak and other plants upon it, and the trees over a large area are richly ornamented with the drapery of this hanging and luxuriant plant.

Vanderbilt University, Nashville, Tenn. *J. M. Safford.*

Vegetables Under Glass in New Jersey.

To the Editor of GARDEN AND FOREST:

Sir.—It is not an easy matter to find Jobstown on the map of New Jersey, although the place has been made famous for years by the Rancocas stock-farm, from which Parole, Iroquois and many another thoroughbred has gone out to carry the Lorillard colors to victory. The visitor who is now so fortunate as to be shown through the great stables by McLaughlin will find the day too short to listen to the history of the purple-blooded celebrities in their stalls and watch the graceful movements of the youngsters at their exercise. There is not so much to stir the blood in the greenhouses, which stretch away in a continuous line for nearly 1,000 feet, but in them one can see what is perhaps the most successful experiment in this country, on a scale of such magnitude, in raising vegetables for market under glass. This business is carried on by Mr. John G. Gardner, who was the gardener in charge of the establishment here, when it was the custom to furnish its owners in their city home with melons, pineapples and strawberries, green corn and peas—in short, from twelve to fifteen kinds of "home-grown" fruit and vegetables for Christmas dinner. Mr. Gardner now rents the houses and turns his experience and skill to good account in producing fruits and vegetables of the highest quality, and commanding, of course, the highest prices.

It was on the 5th of February when I made my pilgrimage to Jobstown, but the Swamp Maples were red with bloom on the banks of the Delaware; the narrow ribbon of green grass along the water-courses was broadening out and invading the brown stubble in the meadows, and forehanded farmers were plowing in the uplands. As I stepped from the cars I heard

the meadow larks singing, and April was everywhere, stirring all the life in the ground and in the air. Some Nectarine-trees in sunken pots were ready to burst into bloom, and I inquired of Mr. Gardner whether he did not fear the consequences if freezing weather should suddenly come; but he pointed out that on all these flowering shoots there were enough buds, still dormant, to ensure a crop if the precocious ones should freeze; and this explains why so many car-loads of Peaches come to market from Delaware after a serious frost when the buds are swollen has seemed to justify the prophecy that the crop is ruined. These Nectarines in pots, by the way, show what the houses will be called upon to do a little later on. In a general way it may be said that the business here is the growing of Tomatoes and Mushrooms in winter, with Grapes, Figs, Nectarines and Peaches as summer crops. Of course other vegetables are grown, but the Tomatoes and Mushrooms are the main crops.

Many details of the cultural practice here have already been given in GARDEN AND FOREST (vol. ii., p. 5), but the ability to grow good crops under glass is only one of the qualifications for success in the business. The producer must know his markets, and know just what will pay best at a given time, and while having his crops ready in their due season he must arrange for succession in his houses so that the entire space is constantly utilized to the best advantage. In no two of the houses are the rotations exactly alike. In one of the long pits outside, for example, I observed a row of thrifty Tomatoes, just showing bloom, a row of Beans just starting in a long trough-like box extending through the middle of the pit, while pots of *Adiantum cuneatum* were set closely on the front wall. A crop of Cucumbers and one of Asparagus had already been grown in the same pit—the Cucumbers first, trained along under the glass, and the Asparagus roots on the bottom. One large house was filled with tall Tomato plants, trained to a single stem and running up a cord to the roof. They were still bearing well, but would soon give place to other Tomato plants which are now three weeks old. In this house are Vines permanently planted, from which the grapes were cut in November. They were then pruned, laid down and boxed in, to keep them cool and dark before the Tomatoes now bearing were brought into their present position. In April these Vines will be lifted to their places to start, and the second crop of Tomatoes will all have been gathered before the foliage of the Vines shades them injuriously. In another house, where the second crop of Peas is nearly marketed, and where the temperature has been kept low, heat is now gradually admitted, to start the buds of Nectarines, grafted on Plum stock and trained fan-shape along the roof. In another house still, where the first crop of Tomatoes began to yield in November, a second crop is now setting fruit, and after this is marketed the house will be occupied with Figs. These are examples of rotation in different houses; and there will always be a fresh lot of plants ready to take the place of an exhausted crop until the last pot is brought in with a Peach-tree or Grape-vine for the summer.

Mushrooms are growing everywhere in unexpected places, not only in the regulation, deep, dark cellar, but in the side pits, under the staging of the cool houses, and even in the warm houses, where the shutters over the beds are covered thickly with straw for the unusual purpose of keeping the heat out. No Asparagus is now being forced, and the roots are all thrown out. This year the southern Asparagus appeared in New York as early as the 25th of January, and, of course, this arrival breaks the market at once. The increasing competition from the south makes it necessary to know what is going on there every year, so that the grower here can adapt himself to the changing situation. It would not have paid to grow Strawberries for the last holiday season, when Florida was in the market with good berries by Christmas. Hot-house berries grown at that season are necessarily expensive when the days are short, and perhaps dark and foggy; and so few people are willing to pay five dollars a box for berries, that a consignment of fifty boxes will overstock the market. Strawberries at a dollar a basket in March or April are much more profitable, for they are more easily grown in the longer and brighter days, and while the buyers are few who will think of paying five dollars, many a one will take the berries at a dollar or a dollar and a half a basket when southern berries are selling for ten cents a quart. Of course the hot-house berries are better in color, form and flavor than any out-door berry can be after long carriage. It was in preparation for this spring demand that the fine Strawberry-plants, now just coming into bloom here, were layered about the 20th of last July. In August they were potted, and the strong, well developed, single crowns promise an abundant yield. Sharpless is the variety which Mr. Gardner prizes most highly. While on the subject of varieties it may be said that Sion House is the kind of Snap Bean planted generally here. It gives a crop in six weeks from seed, the pod is of fine size and of a deliciously sweet flavor. Rollinson's Telegraph is the frame Cucumber preferred.

No variety of Tomato has been found superior to the Lorillard, which originated here from seed of Perfection fertilized with pollen from Acme. The plants have been kept pure by raising them from cuttings up till the present year. The good points of this Tomato are, its uniformity of size, good color and shape, rich flavor, and a solidity which continues till the fruit is well ripened. The plant, too, has a strong constitution. Ignotum has a good, bright scarlet color, but it lacks uniformity. An Ignotum tomato that will weigh a pound is not uncommon, but many of them are corrugated. The Lorillard will average three or four to the pound, and tomatoes of this size, especially when all are round and smooth, sell more readily than those which weigh from half a pound to a pound. Of the Ignotum, only one out of five will prove of good form, while of the Lorillard nearly four out of five will be of perfect shape. Perfection may be named as the second best Tomato for forcing. Paragon would be valuable, but it fails to color about the stem. Four Tomato plants are grown in a box two feet long and eighteen inches wide, as was described in the article before alluded to. I noted that where the roof was low and the plants had a height of about four feet, the yield had averaged fifteen tomatoes to the plant, or say fifteen pounds to each box. Where the plants had room to grow about six feet high, each vine averaged twenty-six to twenty-seven tomatoes, or, since they were somewhat larger than the others, thirty pounds to the box. A fair wholesale price would be fifty cents a pound. The plants begin to yield about ninety days from the seed.

Mr. Gardner finds the market for winter vegetables enlarging every year. The number of growers are multiplying still more rapidly, however, and success can only be won by the best cultural practice, the widest knowledge of the demands of the market, and the alertness and enterprise to occupy new fields promptly.

"What are you doing with so many Grape-vines in pots?" I asked, when about to leave.

"They are Black Hamburgs, and I sell a good many. You see they will all bear a fair crop this year. When a man builds a grapery he does not like to wait three or four years before he gathers fruit. These potted vines can be set in between his permanent vines, and give almost immediate returns. Since they are to be discarded it is not bad practice to let them bear heavily now. Those which I do not sell can be made to yield me paying crops."

S.

Jobstown, N. J.

Recent Publications.

Manual of the Botany of the Northern United States, including the district east of the Mississippi and north of North Carolina and Tennessee. By Asa Gray. Sixth edition, revised and extended westward to the one hundredth meridian by Sereno Watson and John M. Coulter, with twenty-five plates, illustrating the Sedges, Grasses, Ferns, etc. Ivison, Blakeman & Co., New York and Chicago, 1890.

The fifth and last edition of "Gray's Manual" appeared in 1867. A great advance has been made during the twenty-seven years which have elapsed since its publication in the knowledge of the plants of the region it covered; and the want of a new edition to contain the results of the author's own investigations and those of a number of botanists in different parts of the country, whose early botanical inspirations were largely derived from the early editions of this very work, the constant companion for more than forty years of every one who has studied the flora of eastern America during that time, has long been felt. Professor Gray himself proposed at different periods during the last part of his life to snatch the time from the more important "Synoptical Flora of North America" for a new edition of his Manual, but just the right time never came, and it has been left to Mr. Watson, and his associate, Professor Coulter, to produce, with such assistance as was available, this new and greatly improved Manual. The original plan of the work, so long adhered to and of such general acceptance, has been retained, but the territory covered in the old edition has been extended westward to the one hundredth meridian of longitude—that is, to the western limits of our true Atlantic flora. This change and the insertion of such plants of the old region as are now first included in the Manual increases the bulk of the volume by only fifty-seven pages, and therefore does not take away from its value as a book for field reference. The work seems to be admirably done, and so far

as we have been able to examine it, absolutely free from those annoying typographical errors which it is well nigh impossible to eliminate from a book of this character.

Botanists who believe in the strict application of the law of priority in matters of nomenclature will not derive much comfort from Mr. Watson's decisions in such matters, as they appear in this volume; and they will regret that the fulfillment of their hope for a stable nomenclature for plants, as regards both generic and specific names, must be delayed in this country, at least, by the system adopted in a work which will, of necessity, influence for many years the opinions of the students of botany in the United States. But the authors of the new Manual, in their decision that the specific name first given to a plant, when referred correctly to its genus, is the correct specific name for it, although it may have had a much earlier one in another genus, have the support of many of the most distinguished naturalists of this and of the last generation. The name, however, is not by any means the most important part of the plant; and the object of the Manual is to enable any one finding a plant growing in wood or meadow to identify it readily, and to learn something of its affinities and history. No book ever published fulfilled this object better than "Gray's Manual," which will gain in usefulness and reputation in this new edition, for which the authors will receive the thanks of every one interested in American plants.

Mr. Watson acknowledges the assistance of Mr. S. B. Bebb, of Illinois, who has rewritten the genus Salix for this edition; of Professor L. H. Bailey, who has elaborated the difficult genus Carex, and of Professor D. C. Eaton, who is the author, as he was in some of the previous editions, of the part of the volume devoted to the Ferns and allied orders. The increasing interest taken in this country in the study of cellular Cryptogams has led to the inclusion of the *Hepaticæ*, omitted in the last edition, and now described by Professor L. M. Underwood. A glossary of botanical terms is appended to the volume, besides a Synopsis of the Natural Families, arranged in their sequence, in order that their characters may be clearly contrasted and the general principles which determine their arrangement showed—a new feature in the Manual, and a most useful one.

Periodical Literature.

In *Harper's Magazine* for January we may read of "The Smyrna Fig Harvest," which, though gathered from a very small district, supplies the world with almost all its dried figs. Classic memories fill the air as one travels by railroad from Smyrna, first to the village, which stands where Ephesus once stood, and then along the valley of the Meander where the bottom lands are covered with the Fig orchards. "The soil of this tract is very deep and has the property of retaining moisture so necessary for the crop. This peculiarity is of special importance, as in cases of drought the Fig-tree does not generally show at the time signs of drooping. The leaves retain their strength and color. It is only afterward, when the fruit should have reached maturity, that its stunted size and diminished yield show the effects of the check." The fig grown for drying is a short pulpy fruit, quite unlike the ordinary black eating fig, being bright yellow-green outside, and inside white with a red centre, and, in spite of its abundance of juice, having a poor and rather faint taste. Spring brings no especial beauty to the Fig orchard, as the tiny flowers are borne on the inside of a hollow fleshy receptacle, which later ripens into the fruit. "About the middle of August the figs begin to fall and then all the population of the neighboring villages is poured into the gardens . . . gathering up the fruit and piling it into the baskets. . . . At first the gleaning is over the whole garden. The figs lie as they fall, and the sun has ripened only the most forward of them. But by the end of August the heavy fruit drops so thickly that the pickers will fill a basket with what they gather up from under a single tree," each basket forming a heavy load for a woman. The picturesque appearance of the orchard at this season, with its groups of gaily dressed laborers, is well suggested in the illustrations given. The figs have but a short distance to fall, and "are generally picked up whole. If they lie on the ground for more than twenty-four hours they rapidly spoil. The next step is to dry them. A bank of earth is raised some six inches high and strewn with rushes, and here the figs are laid out in single layers, touching one another. The contact does not last long. The September sun is so hot that in a week the fruit is all shriveled up, and when the figs are but half their original size, the time has come for storing and packing them away in bags." The best are called "Eleme" figs, and these, whether of first, second or third quality, are exported, while the fourth quality is used at home as food for cattle, and in the manufacture of a cheap spirit, the refuse serving as manure. It is curious to learn, however, that the seeds of this quality are employed in London in the making of what is called strawberry jam. All the fruit is sent to Smyrna and thence distributed, the fig market in a narrow street offering one of the most animated sights in the city, and large fleets of steamers often lying in the harbor awaiting their cargo of dried fruit. The fruit is sorted in large warehouses, exclusively by women, but the "pulling" and packing is done by men. In pulling, "the fig is drawn between finger and thumb, flattened and split at the stalk, so as to take the form which it preserves when it ultimately is found on the dinner-table. Through the middle and end of August, and through September, the work is carried on, though in the last weeks of this month the supply of figs falls off and only the best pullers and packers are kept. By the second week in October the fig harvest for the year is at an end." About a quarter of a million of pounds of dried figs are annually exported, in addition to the large quantity of inferior fruit that is used at home.

The writer mentions the practice of hanging wild figs on the cultivated trees when these are in bloom, but misses the significance of the operation. This use of the wild fig is a very old custom known technically as "caprification" and its object is to secure the fertilization of the cultivated fruit through the visits of certain hymenopterous insects (Blastophaga and Sycophaga) which frequent the wild Fig-tree. These insects being thus brought near the cultivated trees, enter the minute orifice of the receptacle of their flowers for the purpose of depositing their eggs, and in doing this convey the pollen of the rare male flowers to the stigmas of the females, which are usually much more numerous in the fig. All this is well known, but the curious part of the matter is how the custom, which has been practiced apparently from an early period, first originated. That its utility and even necessity is fully recognized now appears in the fact stated by our author, that in seasons when the crop of wild figs is light as much as four cents apiece are paid for the wild fruit, and that the profits of the cultivated crop are swallowed up by this outlay. What cunning oriental precursor of Sprengel and of Darwin penetrated the secrets of cross-fertilization?—for without some correct idea of the relation of the visiting insects to the ripening of the fruit, it hardly seems possible that a custom so troublesome and so expensive could have been developed.

The fact that the soil of the valley of the Meander has the property of retaining moisture for a long period makes it the great centre of the fig cultivation in the east, and it is only where similar conditions exist that the culture of the plant can be hopefully attempted. "Some years ago," writes our author, "Mr. West discovered in California a tract of soil which he believed to be almost identical. The climate also was similar. Mr. West took back with him some 300 roots. These Fig-trees have done well. They have made good growth and yielded fair crops, but a sufficient time has not elapsed for the tree to reach such maturity as should test the value of its fruit for preserving. It is only when the trees are from five to seven years old that they begin to bear fruit useful for commercial purposes; but once that age is attained, the tree will yield its annual crop for sixty or seventy, or, with careful pruning, for eighty years."

Orchids at Short Hills, New Jersey.

THE remarkable collection of Orchids in flower at the United States Nurseries is attracting large numbers of visitors this week. The Cypripediums alone present a spectacle that would repay the beholder for a long journey. Indeed, in a journey around the world, one could find no collection superior to this in richness, for it contains more than 400 species, varieties and hybrids. Of these, 212 are now in flower, including many of the rarest and most beautiful in cultivation. The only plant of *C. pavoninum* in the country is blooming here for the first time, and with it such choice hybrids as *C. Godseffianum*, *C. Savageanum*, *C. Sallierii Hyeanum*, *C. Fitcheanum*, *C. microchilum*, *C. calurum Rougieri*, *C. concinnum*, *C. Bergrinianum*, *C. Williamsi*, *C. regale* and *C. nitens superbum*, besides *C. villosum giganteum*, *C. apiculatum*, *C. Lawrenceanum pleioleucum*, *C. Mrs. Canham* and many more. Altogether there are 525 plants of Cypripedium in bloom, representing 212 varieties.

Of course this genus forms but a portion of the bewildering display of more than 1,000 Orchids which Messrs. Pitcher & Manda have in flower. There is a long list of varieties of *Cattleya Trianæ*, including the variety Smithæ, with dark sepals

and petals and orange-colored throat. *Cattleya Skinneri* also appears in many varieties, including several examples of the choice Alba and one of Arnoldiana. *Dendrobium Wardianum album* and *Lælia Arnoldiana* are shown in good specimens, and, in short, there are comparatively few of the really good Orchids now in flower which cannot be studied in this exhibition. *C.*

Notes.

The New York Forestry Association, at an adjourned meeting on Monday, was reorganized with Mr. Morris K. Jesup as President and Mr. J. B. Harrison as Corresponding Secretary. Additional particulars will be given next week.

The records of the Park Superintendent prove that the beauty of Central Park is fully appreciated by photographers at least. During the past year 1,700 permits to take photographs in the park were issued, and since January 1st nearly 300 have been bestowed or renewed, most of them to amateurs.

A letter from Para, Brazil, to the *Nation*, says that lumber forms the cargo of ships from New York to that country, a land possessing, scattered in lavish profusion over thousands of square miles of unbroken forests, sixty-seven varieties of the most valuable woods for structural purposes in the world.

The *Illustrirte Gartenzeitung*, of Vienna, recently republished the greater part of the accounts of *Pinus latifolia* in this journal (ii., 496) and *Staphylea Bolanderi* (ii., 544), saying that the tree "is probably quite unknown as yet in Europe," and that the shrub "has not yet been cultivated with us."

In the gardens of the Royal Botanical Society, of England, may be seen specimens of the common English Oak, which have been grown to fill ornamental beds. Planted forty or fifty years ago, they have been kept closely clipped, and are now only from ten to twelve inches in height, forming a dense mass of leaves.

A correspondent of the Philadelphia *Ledger* writes that active steps are now being taken to establish, at the University of Pennsylvania, a thoroughly equipped laboratory of plant-physiology and anatomy. Professor W. P. Wilson will go to Europe in the spring to visit the leading laboratories there, and will secure the best instruments and appliances and have them at the University ready for use next autumn.

Hermann Jaeger, whose death in the seventy-fifth year of his age was recently announced, was a noted German horticulturist, and had long held the position of Grand Ducal Garden Inspector at Eisenach. But he was still more widely known as perhaps the most popular writer in his country upon the practice and the history of gardening. He was a constant contributor to *Gartenflora* and other journals, and one of his books was the large illustrated work called "Gardening Art and Gardens in Past and Present Times," which was reviewed in our columns last year.

Gardeners as well as amateurs often ask why many plants in cultivation flourish best in soils and situations unlike those to which they had been accustomed in their native state. A writer in the *Gardeners' Chronicle* recently answered this question in a few words. In many cases, he said, plants grow wild not in those places which are best suited to them, but simply in those where competition permits them to exist, while in gardens their enemies are kept at bay by man, and the most favorable conditions for their development can be supplied.

The third volume of Dr. F. C. Schübeler's great work on the trees of Norway—"Viridarium Norvegicum"—has just been issued at Christiana. It is a large quarto of nearly 700 pages, and completes the work, in which not only the different species of trees native to the country are described and illustrated, but also a multitude of individuals remarkable for size, antiquity or abnormal development. A voluminous index now adds to the value of the book, and the polar limits of all the trees native to, or grown in, Norway are systematically given.

Florists' reports indicate a fairly good holiday trade in flowers this year, although at New Year's the sales were much smaller than those at Christmas, which was quite contrary to the rule for several years past. The prevailing epidemic undoubtedly affected the season's gaieties, and, in consequence, the demand for flowers. White flowers constantly grow in favor for decorative uses, now being often employed to the exclusion of all others. It is pleasant to find that, as was the case last year, all florists note an increase in orders for boxes of loose flowers, and a decrease of the desire for "set pieces."

A German journal, discussing the complaint of a French amateur that the Provence Rose, beloved of his ancestors, is sadly neglected to-day, states that 200 varieties of this Rose were once in cultivation, while hardly more than a dozen are familiar now. One of them was La Belle Villagoise, which was brought from Egypt in the time of the First Empire by the court surgeon, Antoine Dubois, a famous Rose grower. He gave it to the Tilly family in Halliée, where it may still be seen, while—so the statement goes—it cannot be seen elsewhere. It is described as having pure white petals streaked with a brilliant rosy red.

The Philadelphia Academy of Natural Sciences, assisted by the American Philosophical Society and a number of individuals, has arranged for an exploring expedition to the less known parts of southern Mexico and Yucatan. Specialists in botany and zoölogy will accompany the geologists, whose chief purpose will be to ascertain the general structure of the basin of the Gulf of Mexico, hitherto studied more thoroughly on the Florida side. As yet the archæologist has done more in the countries referred to than the scientific investigator. The expedition was to sail from New York for Progreso, Yucatan, on the 15th of this month.

In the Scilly Isles, where the cultivation of Narcissus flowers for market has become so large an industry, the rains and winds which rage there with extraordinary violence used to play havoc with the flowers, destroying thousands of spikes in a night. Close hedges were planted, but these did not avail against the searching winds. Of late years, however, the flower-spikes are carefully cut off and taken in-doors as soon as the buds begin to burst and just show the color of the perianth. Here they are slightly forced by being placed in shallow pans of warm water. The keeping qualities of the flowers are not injured by this process, while their perfection is secured and their opening is hastened a day or two.

The raising of Peppermint for the manufacture of oil is an important industry in Wayne County, New York. The plants are set out in May, in rows two feet apart, and grow to be about two feet high by August, when they are cut off close to the roots with a scythe and cured in the sun like hay for about twelve hours. The extracting of the oil is done by professed distillers, who are paid by a toll, or by farmers themselves in stills of their own. The still is a wooden vat about four feet high by six in diameter. In this the Mint is packed close by treading, covered with an air-tight lid, and subjected to the action of steam forced in from the bottom. The oil is volatilized by the steam and condensed in a worm, and the mixed oil and water, collected in a receiver, separate by specific gravity. It is said that there are a hundred public stills in the county, and it is locally believed that nine-tenths of all the oil of Peppermint used in the world comes from this region.

A number of prominent physicians of this city met last week for the purpose of protesting against the destruction of the Adirondack woods, because the extraordinary altitude of the plateau, from which still loftier mountains rise, its equable temperature and the hygienic properties of its coniferous trees combine to render it one of the most valuable health resorts in the world, and especially useful for the cure of consumption in its earlier stages. Dr. Trudeau, Chief of the sanitarium for the cure of consumption at Saranac Lake, reports that twenty-five per cent. of the incipient cases of consumption treated there are cured, and the health-giving properties of the region can be attested by thousands. An appeal to all public spirited citizens was drawn up requesting aid in the effort to enable the state to acquire such portions of the wilderness as had been sold, so that it can be held forever as public ground free to all the people of the state.

Dr. Moehl, of Cassel, writes to *Gartenflora* that the pyramidal variety of the European Oak (*Quercus pedunculata fastigiata*) was first seen during the Seven Years' War, in the Dieburg forest near Harreshausen, in Germany, and that its oldest offspring is the fine specimen which stands by the "bowling-green" in the park of Wilhelmshöhe, near Cassel. In the same park are flourishing young specimens of the fastigiate Hornbeam (*Carpinus betulus*, var. *pyramidalis*) which have been propagated from a tree growing wild in the Reinshard forest, near Münden. This tree was discovered in the winter of 1871–1872 by a hunting party, and stands in a long plantation of Hornbeams which are only from twenty to twenty-five feet in height, while it overtops them, "like a slender Poplar," to a height of about forty feet. It is known that in the year 1820 an order was given to plant this place with natural seedlings of the Hornbeam, so the tree must be about seventy years old. It is said in the neighborhood that its peculiar habit did not show for many years after planting.